



Evaluation #

200428-I

Safety & Buildings Division
201 West Washington Avenue
P.O. Box 2658
Madison, WI 53701-2658

Wisconsin Building Products Evaluation

Material

DuraSpec & GoldGuard
Foam Insulation Board

Manufacturer

Plymouth Foam Incorporated
1800 Sunset Drive
Plymouth, WI 53073

SCOPE OF EVALUATION

GENERAL: This report evaluates the use of DuraSpec and GoldGuard brand expanded polystyrene insulation, manufactured by Plymouth Foam Incorporated.

The **Comm** code requirements below in accordance with the current **Wisconsin Uniform Dwelling Code for 1 & 2 family dwellings:**

- **Foam Plastic Material:** The DuraSpec and GoldGuard brand expanded polystyrene insulation was evaluated in accordance with the fire safety requirements of **s. Comm 21.11**.
- **Thermal Performance:** The DuraSpec and GoldGuard brand expanded polystyrene insulation was evaluated in accordance with the thermal performance requirements of **Subchapter VI, ss. Comm 22.20, 22.21, 22.23, 22.25, 22.27, 22.28, and 22.31**.

The **IBC** requirements below in accordance with the current **Wisconsin Amended ICC Code:**

- **Foam Plastic:** The DuraSpec and GoldGuard brand expanded polystyrene insulation was evaluated in accordance with the fire safety requirements of **s. IBC 2603.1, 2603.2, 2603.3, 2603.4 and 2603.5.6**.
- **Thermal Performance:** The DuraSpec and GoldGuard brand expanded polystyrene insulation was evaluated in accordance with the thermal performance requirements of **s. Comm 63.1018(2)(a)1., (c)**.

DESCRIPTION AND USE

Plymouth Foam's DuraSpec and GoldGuard brand expanded polystyrene insulation boards are nonstructural. The boards are 2 feet by 4 feet (610mm by 1219mm), 2 feet by 8 feet (610mm by 2438mm), 4 feet by 8 feet (610mm by 2438mm), and available in thickness up to 6 inches (152mm), with square edges. The expanded polystyrene

insulation boards are Type I, Type II, Type VIII and Type IX boards with a nominal densities of 1.0 pcf (16 kg/m³), 1.5 pcf (24 kg/m³), 1.25 pcf (20 kg/m³) and 2.0 pcf (32 kg/m³), respectively.

The insulation boards are used in wall cavities, roof assemblies, or on the interior or exterior side of exterior walls. The interior of the building must be separated from the insulation boards with a thermal barrier. A vapor retarder or barrier may be required. The insulation boards may be applied to exterior faces of walls to a maximum thickness of 1-1/2 inches (38mm). The attachment of finish materials (excluding exterior siding) over the insulation board must provide a minimum 1-inch (25.4mm) penetration of the fasteners into wood framing. Wall covering over the insulation must be structurally adequate to resist the required horizontal forces perpendicular to the wall.

The insulation boards may be used as roof insulation and in exterior insulation and finish systems (EIFS) when specifically recognized as a component of the assembly or system in a current ICC-ES evaluation report for the roof covering system.

The insulation boards may be used as under slab insulation, foundation and below-grade perimeter insulation.

TESTS AND RESULTS

Plymouth Foam's DuraSpec and GoldGuard brand expanded polystyrene insulation boards:

- All have a flame spread rating of 25 or less, and a smoke development of less than 450 when tested in accordance with ASTM E84.
- Tested in accordance with ASTM Standard C303, STANDARD TEST METHOD FOR DIMENSIONS AND DENSITY OF PREFORMED BLOCK AND BOARD-TYPE THERMAL INSULATION (SECTION 11.2 of ASTM C518);
- Tested in accordance with ASTM Standard C 518, THERMAL TRANSMISSION PROPERTIES BY MEANS OF THE HEAT FLOW METER APPARATUS (SECTION 11.4 of ASTM C 578);
- Tested in accordance with ASTM Standard d 1621, COMPRESSIVE PROPERTIES OF RIGID CELLULAR PLASTICS (SECTION 11.5 of ASTM C 578);
- Tested in accordance with ASTM Standard C 203, BREAKING LOAD AND FLEXURAL PROPERTIES OF BLOCK-TYPE THERMAL INSULATION (SECTION 11.6 of ASTM C578);
- Tested in accordance with ASTM Standard E 96, WATER VAPOR TRANSMISSION OF MATERIALS (SECTION 11.7 OF ASTM C 578);
- Tested in accordance with ASTM Standard C 272 (96), WATER ABSORPTION OF CORE MATERIALS FOR STRUCTURAL SANDWICH CONSTRUCTIONS (SECTION 11.8 of ASTM C 578);
- Tested in accordance with ASTM Standard D 2863, OXYGEN INDEX (SECTION 11.10 OF ASTM C 578); and
- Tested in accordance with ASTM Standard D 2126, RESPONSE of RIGID CELLULAR PLASTICS TO THERMAL AND HUMID AGEING (SECTION 11.9 of ASTM C 578).

All testing was performed by Radco Inc., Listing and Testing Division, 3220 E. 59th St., Long Beach, CA 90805, under test report number RAD-2582.

LIMITATIONS OF APPROVAL

General: The Plymouth Foam's DuraSpec and GoldGuard brand expanded polystyrene insulation boards are approved for installation in the cores of concrete-block walls, in the cavities between block and brick or double-brick walls and in pre-cast panels.

The **Comm** limitation requirements below are in accordance with the current **Wisconsin Uniform Dwelling Code for 1 & 2 family dwellings:**

- **Foam Plastic:** The Plymouth Foam's DuraSpec and GoldGuard brand expanded polystyrene insulation boards shall be separated from the building interior with a thermal barrier as required by **s. Comm 21.11 (1)**.

- **Thermal Performance:** The Plymouth Foam's DuraSpec and GoldGuard brand expanded polystyrene insulation boards shall meet the thermal performance requirements of **Subchapter VI, ss. Comm 22.20, 22.21, 22.23, 22.25, 22.27, 22.28, and 22.31**. Calculations shall be signed, sealed and submitted in accordance with **s. Comm 22.31**.

The **IBC** limitations below are in accordance with the current **Wisconsin Amended ICC Code**:

- **Foam Plastic:** The Plymouth Foam's DuraSpec and GoldGuard brand expanded polystyrene insulation boards shall be separated from the building interior with a thermal barrier as required by **s. IBC 2603.4**.
- **Thermal Performance:** The Plymouth Foam's DuraSpec and GoldGuard brand expanded polystyrene insulation boards shall meet the thermal performance requirements of **s. Comm 63.1018(2)(a)1., and (c)**. Calculations shall be signed, sealed and submitted in accordance with **s. Comm 63.1019**.

This approval will be valid through December 31, 2009, unless manufacturing modifications are made to the product or a re-examination is deemed necessary by the department. The product approval is applicable to projects approved under the current edition of the applicable codes. This approval may be void for project approvals made under future applicable editions. The Wisconsin Building Product Evaluation number must be provided when plans that include this product are submitted for review.

DISCLAIMER

The department is in no way endorsing or advertising this product. This approval addresses only the specified applications for the product and does not waive any code requirement not specified in this document.

Revision Date:

Approval Date: October 25, 2004 By: _____

Lee E. Finley, Jr.
Product & Material Review
Integrated Services Bureau